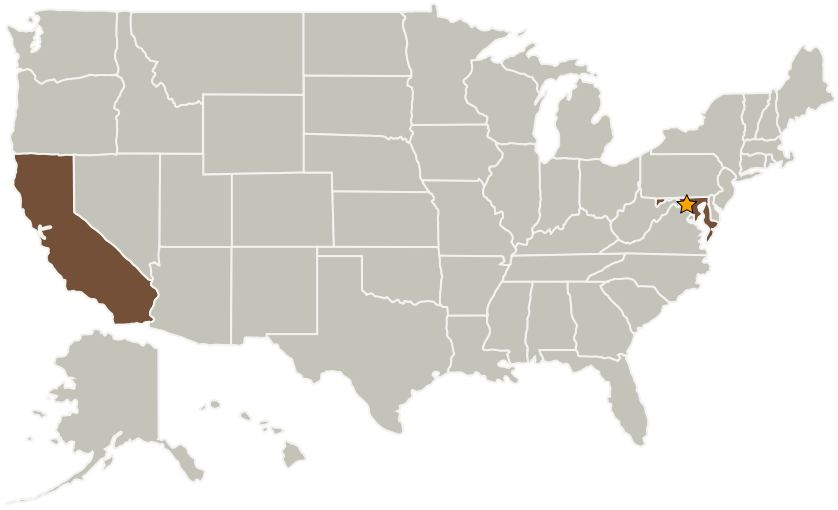
High-Performance, Radiation-Hard, 2-D, Near-Infrared, Avalanche Photodiode Arrays, Phase I

Completed Technology Project (2005 - 2006)

Project Introduction

In this STTR project we will address the radiation hardness issues using radiation hard (RH) materials. We will based on the RH material to develop our photon counting APD device structure and grow and fabricate high-quality devices that can achieve high sensitivity, high uniformity, low dark counts, and fast and small after-pulse dark current. We will further utilize our high quality guard-ring and backside lens techniques to develop reliable, high uniformity, 2-D, APD arrays with near 90% fill-in factor for the detection area coverage.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
AdTech Photonics, Inc.	Supporting Organization	Industry	California

Primary U.S. Work Locations	
California	Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Xiucheng Wu

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes